

a structure adapted to provide a compression ratio sufficient to produce a supersonic thrust;

an air intake end and an exhaust end;

said exhaust end having a partition that divides said exhaust end into a first side and a second side such that a first stream exits said exhaust end on said first side and a second stream of heated air exits said exhaust end on said second side;

a combustion chamber for heating adapted to heat said first stream such that said first stream is expelled from said exhaust end of said engine to produce said supersonic thrust, and

a heating mechanism adapted to heat said second stream such that said second stream is expelled from said exhaust end of said jet engine to produce a subsonic thrust adjacent to said first thrust and thereby prevent Mach waves from said supersonic thrust.

2. The jet engine of claim 1, wherein said first and second stream pass through said combustion chamber before said partition separates said first stream from said second stream; after said separation, said heating mechanism designed to further heat said second stream.

3. The jet engine of claim 1 wherein said jet engine is a turbojet engine.

4. The jet engine of claim 1 wherein said jet engine is a turbofan engine.

5. The jet engine of claim 1, wherein said heating mechanism is a suppression burner, said suppression burner being designed to heat the air by burning a fuel.

6. The jet engine of claim 1, wherein said heating mechanism is a variable compression ratio fan which can change its compression ratio and produce heat.

7. The jet engine of claim 1, wherein said partition is an inner shell core of a jet engine.

8. The jet engine of claim 1, wherein said partition further has louvers or apertures which can be opened to allow mixing of said first and said second stream.

9. The jet engine of claim 1, wherein said jet engine is at least partially surrounded by a shroud, said shroud forming a confining wall for said second stream.

10. The jet engine of claim 1, wherein said heating mechanism is a divider which diverts said first stream to entirely form or to mix with said second stream.

11. The jet engine of claim 10, wherein said jet engine has a second divider which further divides said second stream from a third stream; and

a heating mechanism adapted to heat said third stream to a temperature different from that of said second stream,

such that said third stream is also expelled from said exhaust end of said jet engine to produce a third thrust adjacent to said second thrust and thereby prevent Mach waves from said second thrust.

12. The jet engine of claim 1, wherein said first stream has a circular or elliptical cross section at a plane, said plane located at said exhaust end of said jet engine.

13. The jet engine of claim 1, wherein said first stream has a rectangular cross section at a plane located at said exhaust end of said jet engine.

14. A jet engine in use propelling an aircraft at a supersonic speed together with the exhaust stream thereof, said engine comprising:

an air intake end and an exhaust end;

a first passage and a second passage extending between said air intake end and said exhaust end;

a combustion chamber in fluid communication with and located along said first passage such that a portion of said first passage is disposed to receive a first flow of exhaust between said combustion chamber and said exhaust end;

said first flow of exhaust forming said supersonic exhaust stream upon exiting said engine;

a heating mechanism in fluid communication with and located along said second passage such that a portion of said second passage is disposed to receive a second flow of exhaust between said heating mechanism and said exhaust end;

said second flow of exhaust forming a subsonic exhaust stream upon exiting said engine; and

said supersonic exhaust stream at least partially enveloped by said subsonic exhaust stream.

15. The jet engine of claim 14 wherein said jet engine is a turbofan engine.

16. The jet engine of claim 14, wherein said heating mechanism is a suppression burner, said suppression burner being designed to heat the air by burning a fuel.

17. The jet engine of claim 14, wherein said second passage substantially encloses said first passage.

18. The jet engine of claim 14, wherein said jet engine is at least partially surrounded by a shroud, said shroud defining an exterior wall of said second passage.

19. The jet engine of claim 1, wherein said first exhaust stream has a circular or elliptical cross section at a plane, said plane located at said exhaust end of said engine.

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